CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1   1.   A digital filter for applying one of a
2   plurality of correction factors to first digital
3   data in accordance with a difference in value
4   between said first digital data and second digital
5   data, said filter comprising
6   means for determining an increase in value of a
7   correction value according to said difference within
8   a range above a threshold, and
9   means for summing said increase in value of
10   said correction value with a maximum increase in
11   said correction value for each lower range of
12   difference values.

1   2.   A digital filter as recited in claim 1, wherein
2   said rang and said lower ranges are defined by
3   threshold difference values.

1   3.   A digital filter as recited in claim 1, wherein
2   said first and second digital data are image
3   luminance values.

1   4.   A digital filter as recited in claim 3, wherein
2   said image luminance values are luminance values of
3   adjacent pixels in a direction orthogonal to a
4   raster line.

EN9-99-114 (00240071AA)

1 5.   A digital filter as recited in claim 1, wherein
2 said second digital data is truncated by a least
3 significant bit.

1 6.   A digital filter as recited in claim 1, wherein
2 a range of possible values of said first and second
3 data is clipped, providing disallowed values of said
4 first and second digital data.

1 7.   A digital filter as recited in claim 6, wherein
2 said second digital data is truncated by at least
3 one least significant bit.

1 8.   A digital filter as recited in claim 6, further
2 including
3   means for storing said first digital data and
4 accessing values thereof as said second digital
5 data.

1 9.   A digital filter as recited in claim 8, further
2 including
3   means for compressing said first digital data
4 by encoding a run length of sequential identical
5 values in accordance with said disallowed values.

1 10. A digital filter as recited in claim 7, further
2 including
3   means for storing said first digital data and
4 accessing values thereof as said second digital
5 data.

EN9-99-114 (00240071AA)

42

1   11.   A digital filter as recited in claim 10,
2   further including
3   means for compressing said first digital data
4   by encoding a run length of sequential identical
5   values in said at least one bit truncated from said
6   second digital data.

1   12.   A digital filter as recited in claim 11,
2   further including
3   means for compressing said first digital data
4   by encoding a run length of sequential identical
5   values in accordance with said disallowed values.

1   13.   A digital filter as recited in claim 12,
2   wherein one of said disallowed values in a flag
3   indicating compression in accordance with another of
4   said disallowed values.

1   14.   A digital filter as recited in claim 4, wherein
2   said first digital data represents one of a
3   plurality of image planes and further includes at
4   least one said correction factor associated with a
5   region of an image in said image plane.

1   15. A data processor including

2   means for clipping respective digital values to

3   provide disallowed values of digital data,

4   means for truncating said digital values by at

5   least one least significant bit forming truncated

6   digital values, and

7   means for compressing said digital values by

8   encoding a run length of sequential identical

9   truncated digital values with said disallowed values

10   of said digital data and at least one bit replacing

11   said at least one least significant bit.

1   16. A data processor as recited in claim 15,

2   wherein at least one said disallowed value is a flag

3   indicating encoding of a run length as another

4   disallowed value.

1   17. A method of processing digital data including

2   steps of

3   truncating at least one least significant bit

4   of said clipped digital signal values forming

5   truncated digital signal values, and

6   filtering respective values of said digital

7   data with corresponding ones of said truncated

8   digital signal values.

1   18. A method as recited in claim 17, wherein said

2   filtering step is performed with each of two of said

3   truncated digital signal values.

19. A method as recited in claim 18, including the
further steps of
    clipping digital signal values to a range
forming clipped digital signal values and disallowed
values, and
    compressing said truncated digital signal
values in accordance with run length codes using
said disallowed values and said at least one least
significant bit.

20. A method as recited in claim 18, including the
further step of deriving one of said two signal
values by storing another of said truncated digital
signal values in a buffer for the duration of a scan
line.

18. A method as recited in claim 17, including the
further step of
    storing said truncated digital signal values in
a form encoded with said disallowed values.

19. A method as recited in claim 17, wherein said
filtering step includes
    summing an increase in value of a correction
factor in a range of difference values between a
value of said digital data and a corresponding
truncated digital signal value with a maximum
increase in said correction value for each lower
range of difference values.

20. A method as recited in claim 18, wherein said

2   filtering step includes

3   summing an increase in value of a correction

4   factor in a range of difference values between a

5   value of said digital data and a corresponding

6   truncated digital signal value with a maximum

7   increase in said correction value for each lower

8   range of difference values.